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(56) Documents Cited

GB 2249775 A	GB 2190596 A	GB 2131301 A
GB 1461724 A	US 5244122 A	

(58) Field of Search  
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(54) Feeder of baby's bottle type

(57) The feeder comprises a bottle 1 having a compressible portion 11, a nipple 2 retained thereon by a threaded cylindrical cap 4 and a rod-like member 3 which extends within the nipple. The member 3 comprises a lower ring 31 and several ribs 32 having their lower ends fixed to the ring so as to form through holes 33 which provide passageways for solution to pass into the nipple and out via hole 21. The ribs lie within the chewable part of the nipple so as to prevent the nipple from being chewed too deeply by the user.

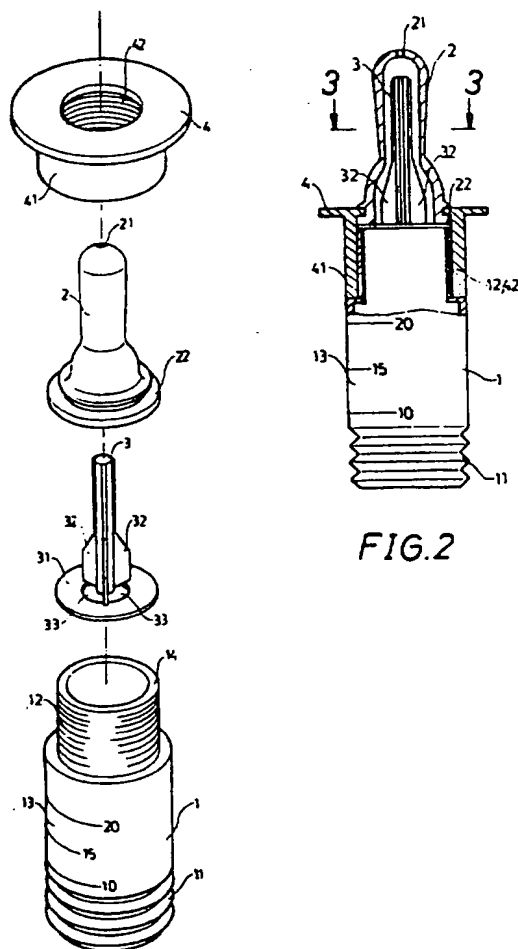
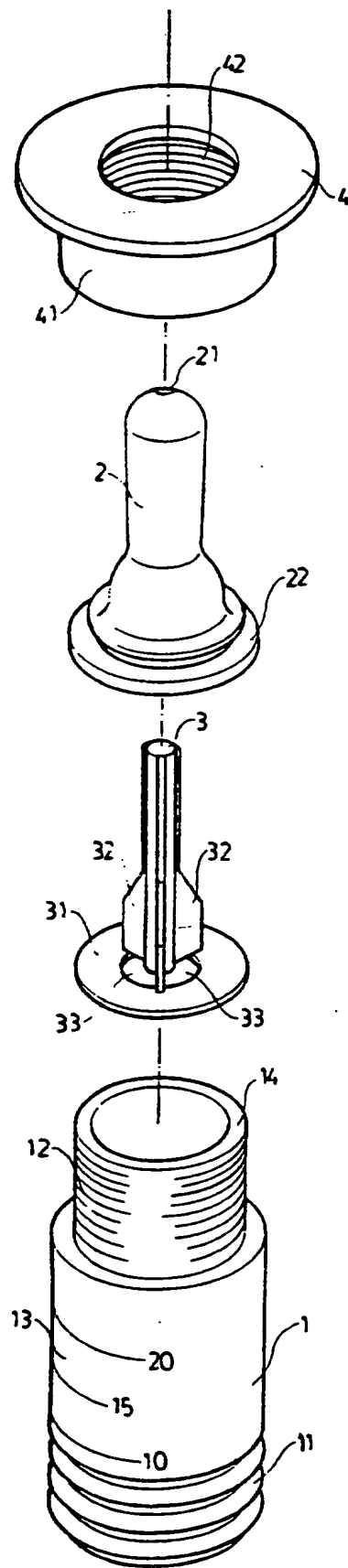


FIG. 2

FIG. 1

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FIG. 1

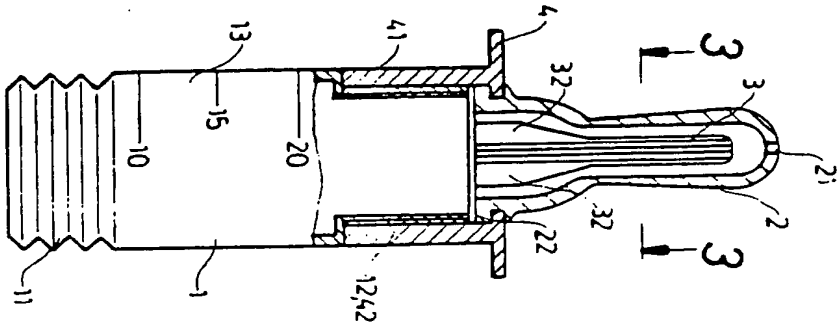


FIG. 2

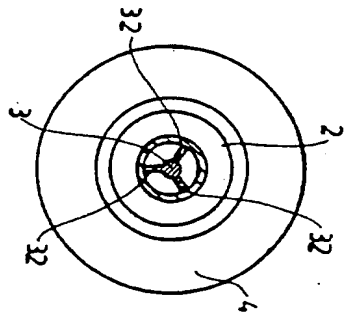


FIG. 3

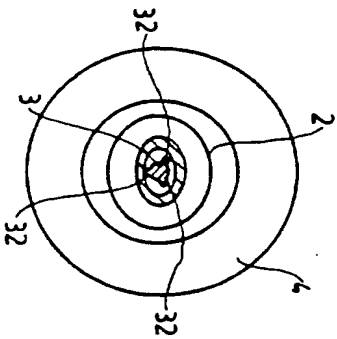


FIG. 4

## 1 SOLUTION FEEDER WITH A NIPPLE

2 BACKGROUND OF THE INVENTION

3 This invention relates to a solution feeder with a  
4 nipple, particularly one that can forcibly make the solu-  
5 tion contained in a bottle flow into the mouth of a user,  
6 i.e. a baby, even if the user resists to chew the nipple.

7 A known conventional feeder has a spoon-shaped head  
8 instead of a nipple to receive the solution contained in  
9 a bottle and then for a user to drink. However, the spoon-  
10 shaped head is open so that the solution received there-  
11 in is liable to drop out in case of the user's resistance.

12 Another known conventional feeder has a bottle, an  
13 annular cap, a nipple, a cone-shaped annular nipple  
14 supporter, a ring fixed around an upper portion of the  
15 nipple supporter, and a soft sack positioned in a center  
16 hollow of the nipple supporter. The nipple supporter has

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2 the upper and the lower end of its center hollow provided  
3 with a leaking hole for the solution contained in the  
4 bottle to drip out of the nipple. Provided a user should  
5 resist to chew the nipple and bites the nipple with force,  
6 the solution would not flow out of the nipple.

7 SUMMARY OF THE INVENTION

8 In order to solve the problems in the art mentioned  
9 above, the present invention has been worked out to pro-  
10 vide a solution feeder with a nipple comprising a bottle,  
11 and a nipple for a user to chew to drink the solution  
12 contained in the bottle. In case that the user resists to  
13 chew, the elastic bottle can be compressed to force the  
14 solution to flow through passageways formed between an  
15 inner rod positioned in the nipple and the nipple to flow  
16 out of the nipple into the mouth of the user even if the  
17 user should resists and bite the nipple.

18 BRIEF DESCRIPTION OF DRAWINGS

19 This invention will now be described in detail with  
20 reference to accompanying drawings wherein:

21 Figure 1 is an exploded perspective view of a solu-  
22 tion feeder with a nipple in the present invention;

23 Figure 2 is a partial cross-sectional view of the  
24 solution feeder with a nipple in the present invention;

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2       Figure 3 is a cross-sectional view taken along line  
3       3-3 of Figure 2;

4       Figure 4 is a cross-sectional view of a nipple  
5       bitten in the present invention.

6       DETAILED DESCRIPTION OF THE INVENTION

7       A preferred embodiment of a solution feeder with a  
8       nipple in the present invention, as shown in Figure 1,  
9       comprises a bottle 1, a nipple 2, an inner rod 3 and a  
10      cylindrical cap 4 as main components combined together.

11      The bottle 1 is made of a soft elastic material,  
12      having a compressible portion 11 to be compressed up and  
13      down so that the dimensions of the bottle 1 may be re-  
14      duced, and thus the solution contained in the bottle 1  
15      may be forcibly pressed out of the bottle 1. The outer  
16      surface of the bottle is marked with several numbers to  
17      indicate the quantity of the solution contained in the  
18      bottle 1.

19      An upper portion of the bottle 1 has its outer sur-  
20      face provided with a thread 12 to engage with an inner  
21      thread of the cylindrical cap 4 so as to combine the  
22      nipple 2 on top of the bottle 1.

23      The nipple 2 is the same as a conventional nipple,  
24      having a hole 21 in the top for the solution in the

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2 bottle 1 to flow out, and positioned on top of the bottle  
3 1 by means of the cylindrical cap 4 after the cap 4 is  
4 screwed with the upper threaded portion 12 of the bottle  
5 1, with a cylindrical portion of the nipple 2 passing  
6 through a center hole of the cap 4 and projecting up. The  
7 nipple 2 also has a bottom ring 22 with a larger diameter  
8 than the rest portion of the nipple 2 does.

9 The inner rod 3 is to extend lengthwise in an in-  
10 terior of a chewing portion of the nipple 2, having a  
11 large diameter ring 31 at the bottom, several vertical  
12 ribs 32 projecting out radially or irregularly from a  
13 lengthwise body of the inner rod 3. The ring 31 is posi-  
14 tioned on top of the bottle 1 as the bottom ring 22 of  
15 the nipple 2 is. The ribs 32 has their bottom ends fixed  
16 firmly on the ring 31, forming several through holes 33  
17 between the rod 3 and the ring 31. The length of the rod  
18 3 is a little shorter than that of the nipple 2, letting  
19 the top of the rod 3 separated from the hole 21 of the  
20 nipple 2 with a proper distance to prevent the hole 21  
21 from blocked up.

22 The cylindrical cap 4 has a cylindrical portion 41  
23 with an inner thread 42 to engage with the threaded por-  
24 tion 12 of the bottle 1, a center hole for the chewing

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2 portion of the bottle 1 to pass through upward, and an  
3 annular upper rim of a larger diameter than that of the  
4 nipple 2 for the lip of a baby user to contact with so as  
5 to prevent the nipple 2 from chewed too deep by a baby  
6 user.

7 Figure 2 shows the condition of this solution feeder  
8 completely combined together, and a medicinal solution is  
9 to be poured in the bottle 1, then the cylindrical cap 4,  
10 the nipple 2, and the inner rod 3 are to be combined on  
11 top of the bottle 1.

12 Figure 3 shows the condition of the chewing portion  
13 of the nipple 2 while it is not yet chewed by a user. In  
14 the course of user's chewing the chewing portion of the  
15 nipple 2 may be disfigured, but not tightly contact  
16 with the outer surface of the inner rod 3, prevented by  
17 the ribs 32 thereof. Therefore, several gaps are formed  
18 between the nipple 2 and the inner rod 3, permitting the  
19 medicinal solution to flow through upward to pass through  
20 the hole 21 of the nipple 2, provided the bottle 1 is  
21 compressed repeatedly.

22 A special feature of the present invention is the  
23 inner rod 3 provided to be positioned in the interior of  
24 the nipple 2 for hampering the nipple 2 from completely



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2 bit or chewed hard to become blocked up. And the ribs 32  
3 can be displaced by other equivalents such as grooves  
4 regularly or irregularly provided, as long as they can  
5 form gaps between the nipple 2 and the inner rod 3 for  
6 the solution in the bottle to pass through. Then, they  
7 can be deemed to be the same art of the present invention.

8       The structure of the solution feeder in the present  
9 invention never give rise to the problem of chewing the  
10 nipple 2 too deep to hurt the throat of a baby user in  
11 practical use. Even if a user should resist to chew the  
12 nipple 2 and bite it, the medicinal solution can be still  
13 forced to flow through the holes 33 of the ring 31 and  
14 the hole 21 of the nipple 2 by means of compressing the  
15 bottle 1. And in addition, the inner rod 3 can be taken  
16 off together with the cylindrical cap 4, without need of  
17 directly catching hold of the rod 3 manually, preventing  
18 it from being contaminated in handling the nipple 2, the  
19 inner rod 3, and the cylindrical cap 4.

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2 WHAT IS CLAIMED IS:

3 1. A solution feeder with a nipple comprising a bottle  
4 having an upper threaded portion for a cylindrical cap to  
5 engage with and to combine firmly together a nipple and  
6 an inner rod with the bottle, said bottle made of an ela-  
7 stic material and possible to be compressed to force the  
8 solution contained therein flow out through a hole in the  
9 nipple, and characterized by the inner rod fixed to be  
10 located within the nipple, and having a larger diameter  
11 ring at the bottom than that of the rod body and located  
12 on top of said bottle, by said inner rod extending in a  
13 chewing portion of the nipple but with its top end separa-  
14 ted from the hole of said nipple with a proper distance,  
15 by gaps formed between said inner rod and the inner sur-  
16 face of said nipple, said inner rod having several  
17 through holes for solution to pass through.

18 2. The solution feeder with a nipple as claimed in Claim  
19 1, wherein said inner rod has several vertical ribs pro-  
20 jecting out from the rod body radially or irregularly and  
21 having the same height as that of the chewing portion of  
22 the nipple.

23 3. The solution feeder with a nipple as claimed in Claim  
24 1 and 2, said inner rod has several grooves formed regu-  
25 larly or irregularly instead of said ribs.

4. A device for use with a feeding nipple, comprising an elongate member adapted to be positioned within the nipple to provide at least one passageway to adjacent the hole of the nipple.
5. A feeder substantially as hereinbefore described with reference to the accompanying drawings.

<b>Patents Act 1977</b> <b>Examiner's report to the Comptroller under Section 17</b> <b>(The Search report)</b>	Application number GB 9501782.8
<b>Relevant Technical Fields</b>  (i) UK Cl (Ed.N)      A5X (X5E, X5X); B8T (TDAX, TWG, TWX) (ii) Int Cl (Ed.6)      A61J 9/00, 11/00, 11/02, 11/04	Search Examiner L V THOMAS
<b>Databases (see below)</b> (i) UK Patent Office collections of GB, EP, WO and US patent specifications.  (ii) ONLINE: WPI	Date of completion of Search 5 MAY 1995
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<b>A:</b> Document indicating technological background and/or state of the art.	<b>&amp;:</b> Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2249775 A (TRIPP) see page 5 line 12 to page 6 line 9, page 10 line 20 to page 11 line 10 and Figure 2	4
X	GB 2190596 A (MA) see whole document	4
X	GB 2131301 A (HABERMAN) see Figure 1 and page 2 lines 16 to 44	4
X	GB 1461724 (LIN) see page 2 lines 44 to 54 and Figure 6	
X	US 5244122 (BOTTS) see column 2 lines 36 to 60, column 4 lines 1 to 11 and column 5 lines 36 to 49	1, 4

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